ASSOCIATION OF ISSUING BODIES

CARBON POLICIES & RENEWABLE ENERGY MARKETS

How Might Carbon Regulation Affect Green Power Markets

Phil Moody - General Secretary, Association of Issuing Bodies, Europe

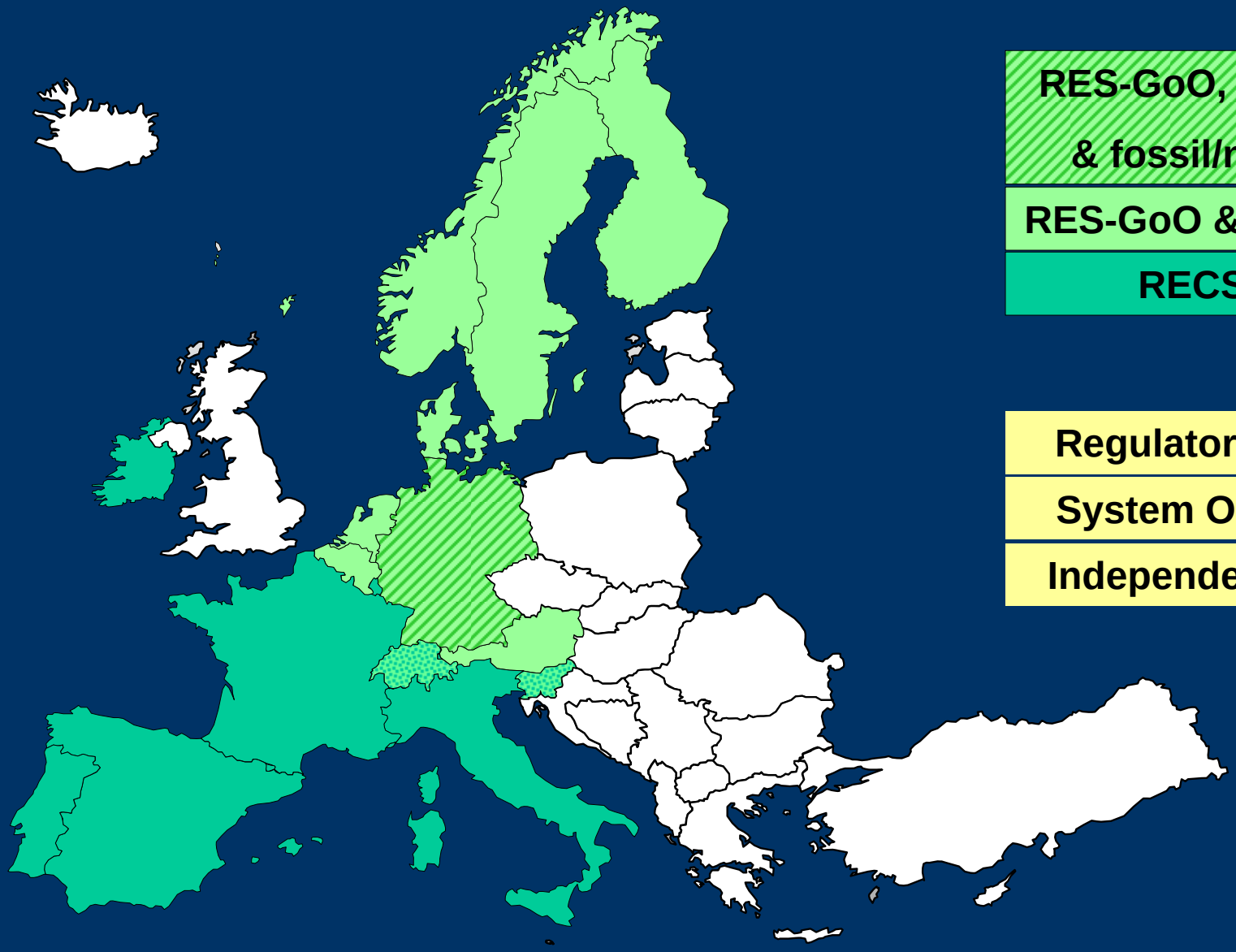
San Francisco, 4th December 2006

AIB services

- Promote international certificate standards
- Provide access to international markets
- Inform the market
- Share experiences
- Achieve economies of scale

European Energy Certificate System			
	Since 2001	2005	2006
Issued	157 million	48 million	41 million
Exported	40 "	14 "	10 "
Redeemed	84 "	25 "	29 "

AIB Members



RES-GoO, RECS & fossil/nuke

RES-GoO & RECS

RECS

Regulator (3-4)

System Op. (7)

Independent (5)

All government-appointed issuers of electronic transferable guarantees of origin from mainland Europe are members of the AIB

History

Early 90's	Green contracts & "swaps"
Mid 90's	National systems (in Netherlands)
1999	Formation of RECS
2000	
2001	"Test Phase"
2001	AIB & RECS International founded
2003	EECS: several types of energy certificate in one system
2004	*Obligatory renewable energy guarantees of origin* *Voluntary RECS certificates*
2005	Fossil & nuclear
2006	High-efficiency CHP Central communications Hub
2007	White certificates (energy efficiency), bio-diesel, biogas..

Testing

Live

What is a REC?

- **Proof of:**
  - *Energy source and environmental impact for consumers*
  - *Compliance with national indicative targets for government*
  - *Compliance with obligations for support schemes*
- **Can be used to calculate CO2 emission reductions**
- **In some regimes, a commodity (in others it isn't)**
- **A European consideration - either it is:**
  - *An exchangeable green certificate*
    - Provides evidence of energy source for compliance with a support scheme
    - Has a value underwritten or influenced by government

    OR
  - *A guarantee of origin*
    - Provides evidence of energy source for disclosure to consumers

Major design issues

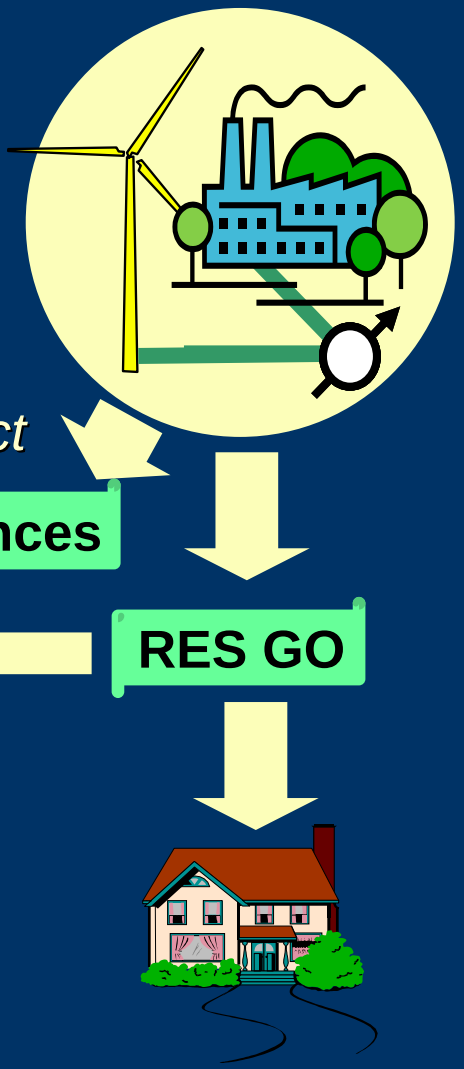
- **Double issue and sale of RECs**
- **Independence of Issuing Body**
- **Public support**
  - *Impact on value?* *(not much)*
- **Gross and net metering**
  - *Treatment of line losses* *(at grid connection)*
  - *Treatment of auxiliaries* *(netted off)*
  - *Islanded plant* *(why not? Iceland!)*
- **Treatment of carbon**
  - *Does a REC include carbon?* *(no)*
  - *Do consumers care?* *(no - they want clean energy, not carbon rights)*

Stick and carrot approach to renewables

- **Government wants a level playing field for renewables**
- **It provides the stick**
  - *Obligations*
  - *Support schemes*
- **Consumers want clean air**
- **They provide the carrot**
  - *Consumer choice*

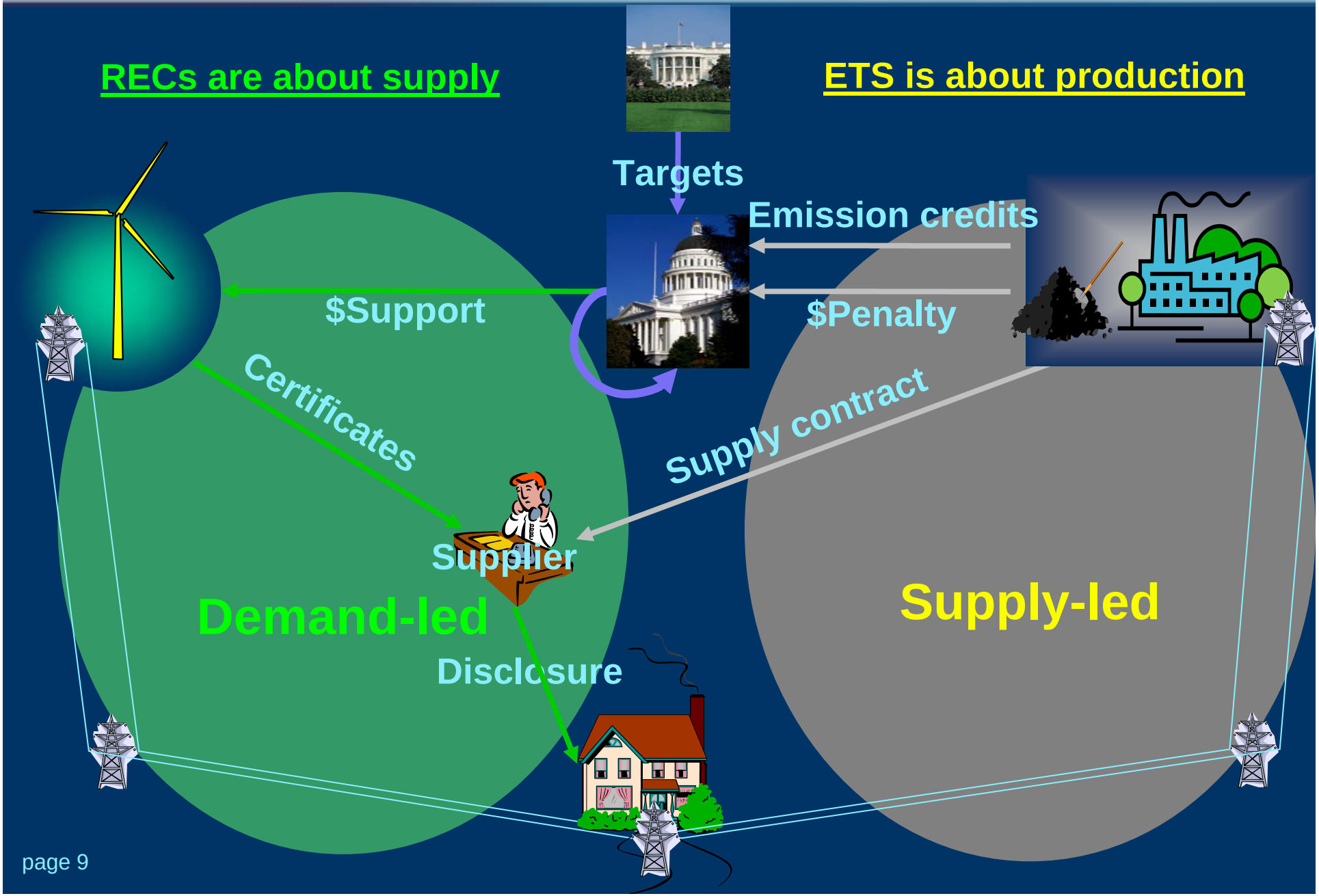
European RES / emissions legislation

- **"RES" Directive 2001/77/EC**
  - *Internationally transferable guarantees of origin for RES (= RECs)*
  - *National indicative targets*
- **"Internal Markets" Directive 2003/54/EC**
  - *Disclosure of energy source + environmental impact*

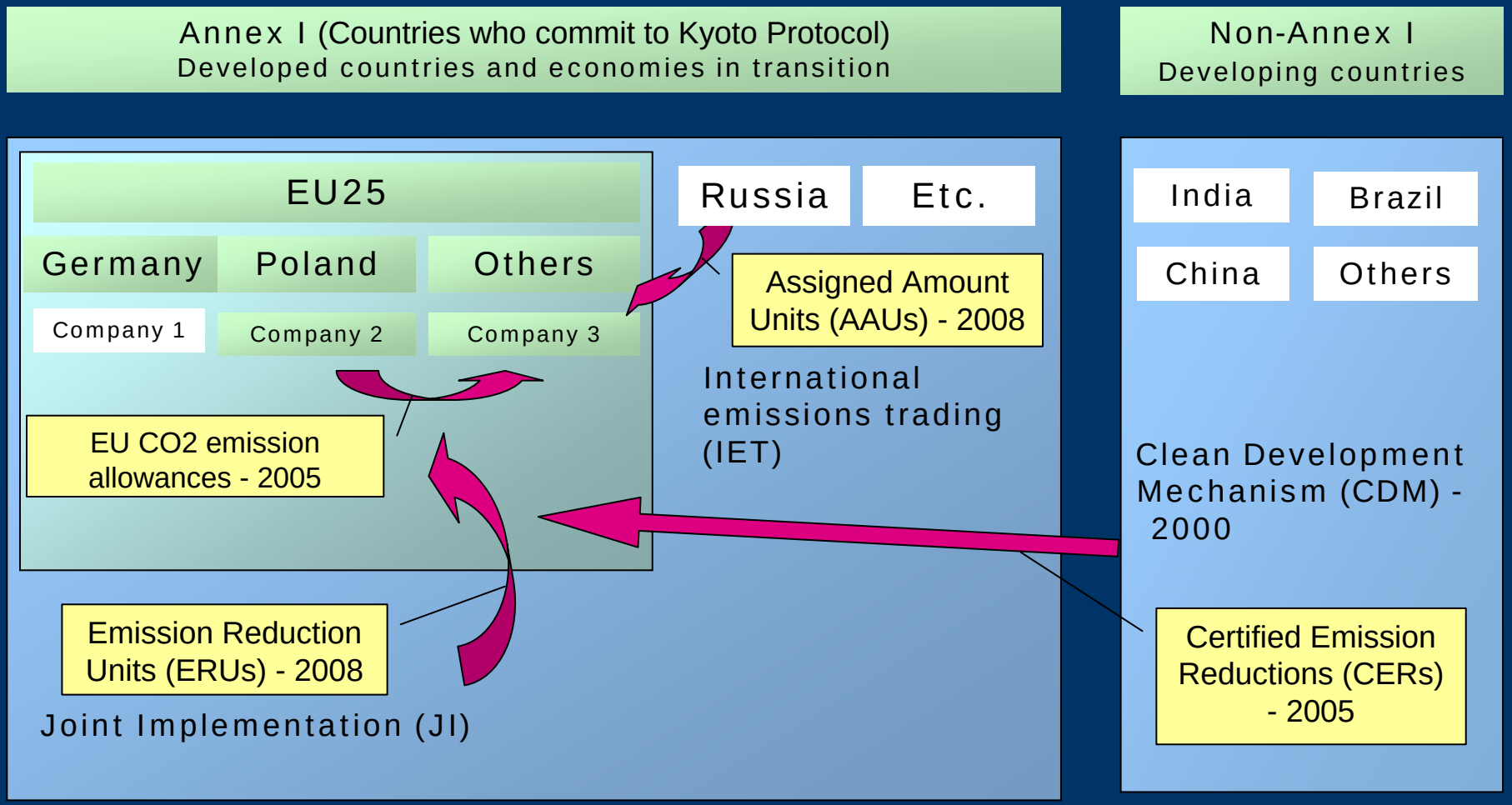


- **"Emission Trading" Directive 2003/87/EC**
  - *Emissions Trading Scheme*
- **"Linking" Directive 2004/101/EC**
  - *Project mechanisms (CDM & JI)*

Differences between RECs & ETS



Overview of Carbon Markets



EU Emissions Trading Scheme

- Covers power, ferrometals, minerals, pulp and paper (aviation?)
- Initially only CO_2
- 1st commitment period = 2005-07 … then 2008-2012
- 12,000 plant registered and can trade
- National Allocation Plan (NAP) sets national targets per plant
- Companies
  - *emitting too much can buy from those better at cutting emissions*
  - *must report emissions annually*
- Companies exceeding target fined for excess tonnes CO^2
  - *€40 in 2005 -> €100 in 2008*
  - *Price for carbon allowances €8-10 per tonne (NB: cheaper than the fine!)*
- Intention: stimulate innovation & incentivise emission reduction

Differences between RECs & CERs

- **RECs support "greenness":**
  - *Climate Change reductions (mainly C02 and CH4)*
  - *Improved local air quality (e.g. avoided SOx and NOx)*
  - *Energy Security and Diversity of Supply*
  - *Improved resource utilisation and avoidance of imports*
  - *Distributed generation benefits (such as peak shaving)*
  - *Development of Renewable Energy markets*
  - *Renewables Industry Development*

- **CERs:**
  - *Value climate change benefits of a project*
  - *Promote technology transfer and sustainable development*

REC & Emission Trading Markets (1)

- **Renewables improve climate, security of supply and use of local energy**
  - *EU countries have independent targets for CO2 & renewables*
- **EU-ETS indirectly promotes RES**
  - *Adds to fossil fuel prices*
  - *But not enough on its own to make renewables feasible*
- **Although EU-ETS and RECs are linked by electricity, combining certificates is not necessarily sensible:**
  - *Calculation of climate change benefit of a REC is difficult*
  - *Ownership of climate change benefit might cause problems*
- **Different definitions of products**
  - *Allowances for emitters,* *RECs for CO2-free production*
  - *Allowances for future production,* *RECs for past production*
  - *Legal status of RECs and emission allowances may be different in different countries*

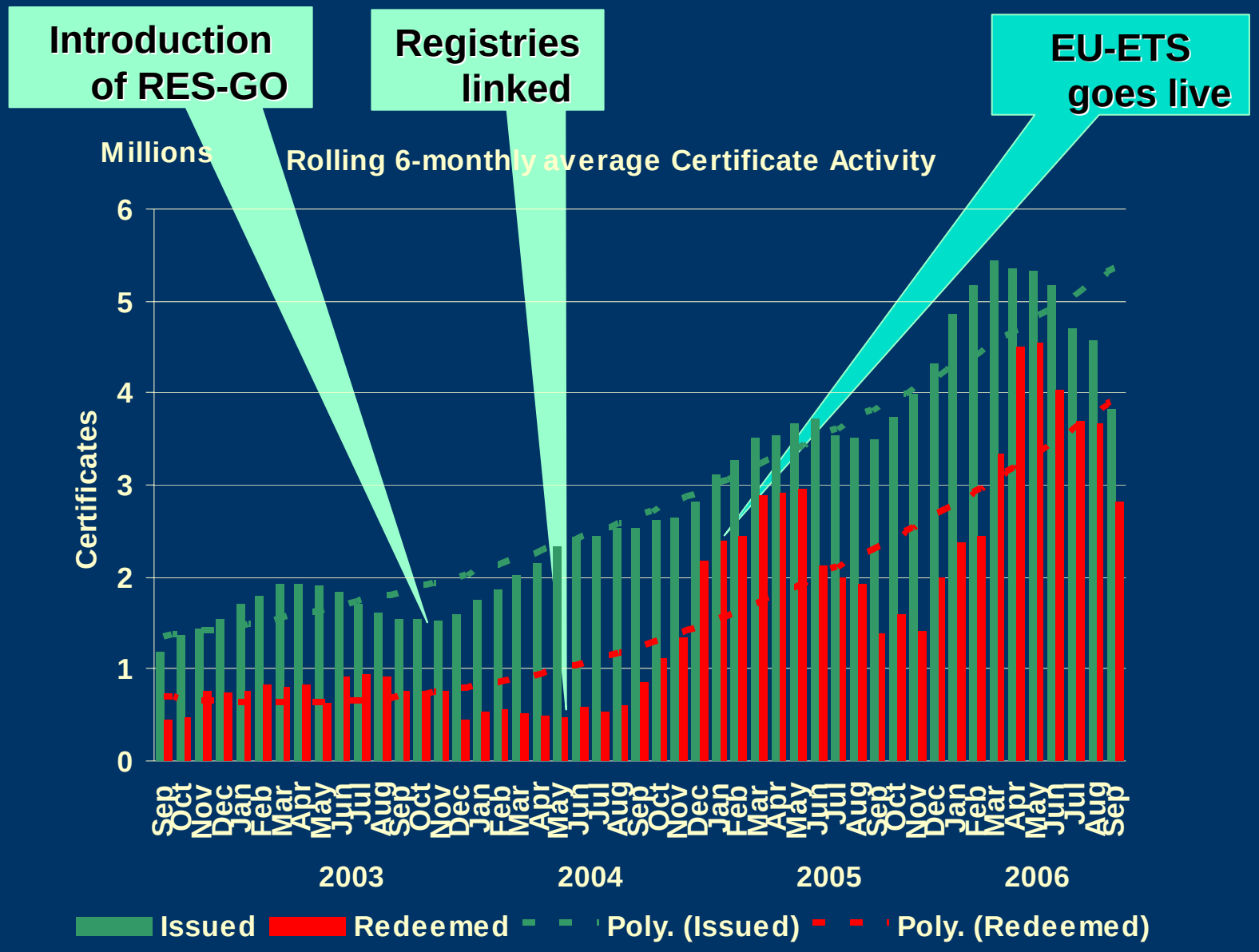
REC & Emission Trading Markets (2)

- **Markets have different drivers and are basically separate**
  - *EU-ETS clearly differentiates green value and CO2 emissions*
  - *Renewables are not just about climate change*
  - *A clean environment does not necessarily mean secure supply*
  - *Consumers have different requirements to government*

- **Clear link can be seen in monitoring and verification:**
  - *Emissions reduction can be linked to amount of produced electricity*
  - *This production is monitored by the Issuing Body*

- **Links between RECs & JI/CDM Credits**
  - *RECs measure electricity, and carbon emissions can be calculated by referring to national emission figures*
  - *Clear link between monitoring and verification:*
    - Emissions reduction is linked to the amount of electricity, and can be monitored by REC Issuing Bodies

Has EU-ETS impacted REC trade?



sources: AIB statistics - 14 September 2006

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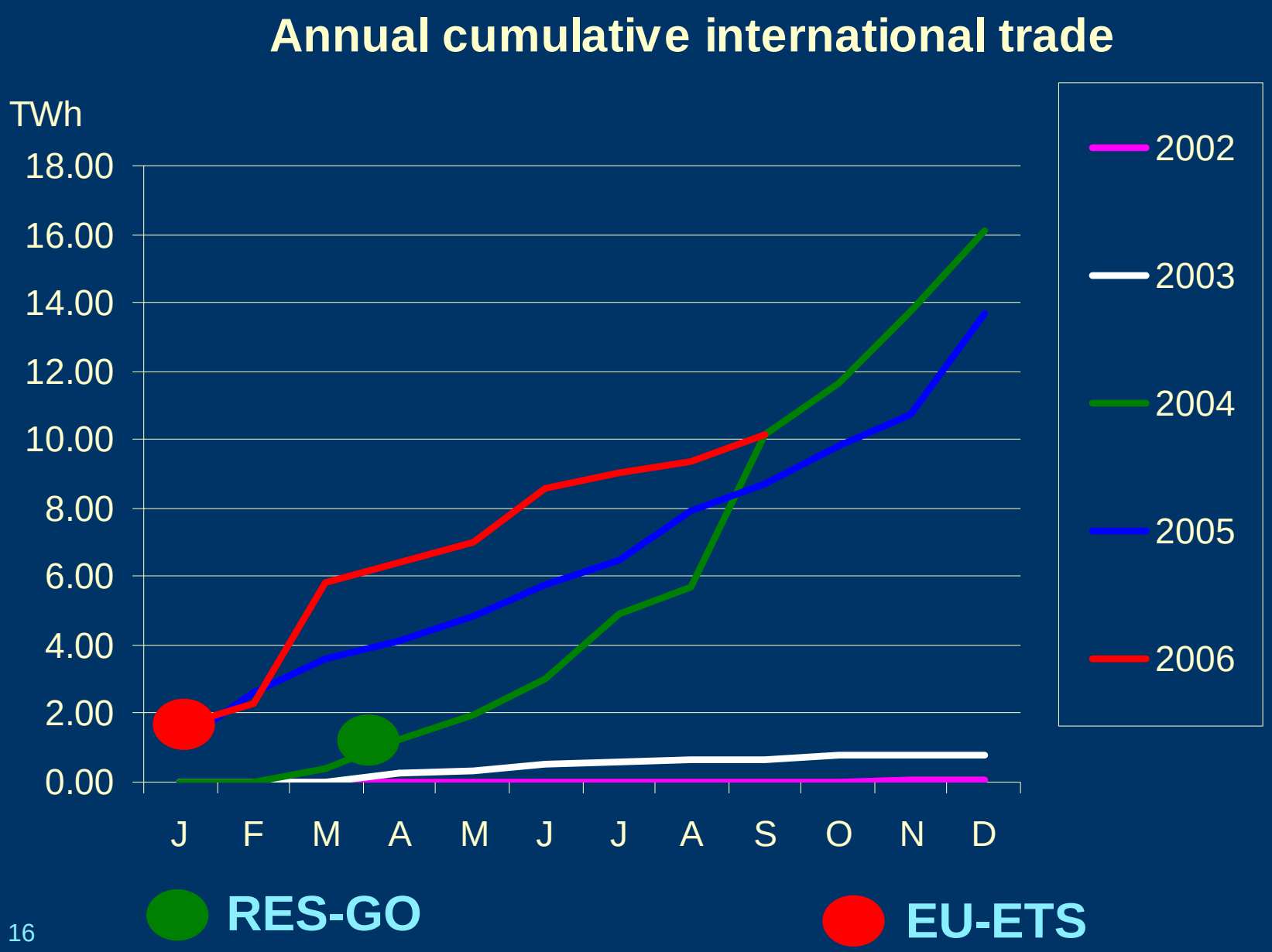

Concluding Remarks

- **Carbon markets will best reduce global emissions when governments pull together**
- **Well-designed REC and Carbon markets can co-exist**
- **REC Issuing Bodies can support both markets**
  - *providing input to consumer confidence programmes and government support schemes*
  - *supporting verification processes of JI / CDM projects*
- **Most consumers simply want clean power**
- **Consumers wanting to reduce emissions – not just buy clean power – need products containing emission credits**

Thanks for your attention

http://www.aib-net.org

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